REM4RKS/ARGUMENTS

In response to the Office Action mailed April 7, 2005, Applicants amend their application and request reconsideration. Upon entry of the foregoing Amendment, claims 5-22, 24-34, and 61-64 remain pending.

The invention as defined by the claims now pending is directed to a system and a method that is particularly useful in storing sets of signals quickly using a low-cost microprocessor. The ability to use in the system and method a low-cost microprocessor is achieved by the way in which the information, in the form of electrical signals, is processed. These signals may, for example, represent audio signals or video signals that are received at an input in an uncompressed format. As well known in the art, it is desirable to store these sets of signals, which may be in digital format or converted to digital format, in a compressed form. The compressed form occupies far less memory space than the same information in an uncompressed form, enabling a memory of fixed capacity to retain more information.

Important features of the invention as claimed by the pending claims are described most succinctly at pages 6-9 of the patent application, although other parts of the patent application provide further description of the invention. Those passages point out that in the invention it is not necessary to use a microprocessor with the computing capacity of the microprocessor typically employed in current personal computers. As a result, there can be a substantial savings in cost. Yet, using the invention, a 60-minute music CD can be stored on a hard disk within six to eight minutes. This storage occurs in the invention with the music information in uncompressed format. The stored information in uncompressed format is converted and stored again in compressed format, just as would be initially produced if a typical PC microprocessor were used initially in storing the input information.

In the invention, after at least part of the information in uncompressed format has been stored, a process of retrieving the information in uncompressed format begins. The information retrieved is compressed, and the information in compressed format is stored. According to the cited passage of the specification, that storage of the information in compressed format may occur in the same memory in which the information in uncompressed format was initially stored. Alternatively, an entirely different memory can be employed, for example, as described in the final lines at page 7 and in claim 17 and other claims, for storage of the information in compressed format.

In a typical apparatus employing the invention, the user may wish to retrieve and, in the case of stored music, listen to, the information stored before compression of the information has started or has been completed. Since the microprocessor employed has limited processing capacity, priorities are established in the processes of storing information in uncompressed format, compressing stored information into compressed format, and retrieving and supplying stored information in uncompressed format for reproduction to the user of the apparatus. The latter function is given priority over any other function and, most preferably, retrieval of information in uncompressed format for compressing that information occurs in the "background", when computing capacity is available. See, for example, the specification at page 8, lines 13-19.

In this Amendment claim 23 is newly cancelled as are claims 35-40, 48-55, and 59. The remaining claims are amended for clarity. Inconsistencies in terms in the same groups of claims are eliminated and uniform terminology is employed throughout the claims in an attempt to make the claims as easily understood as possible.

All examined claims were rejected as anticipated by Fiedler (U.S. Patent 6,804,638). This rejection is respectfully traversed.

Fiedler describes an apparatus and associated method directed to essentially continuous recording of a source of information. The information is continually recorded in what can be characterized as a circular buffer. Recording begins at some arbitrary time and as an input buffer receives information, the information is continuously recorded until the input buffer is full. When the capacity of the input buffer is approached, then its contents may be transferred to an acquisition buffer. The information that is being recorded or stored in the buffers can be discarded or can be retained depending upon the decision and action of the operator of the Fiedler appartus.

The purpose of the circular buffer recording in Fiedler is so that Fiedler can "go back" in time and designate for saving recorded information that was received before the decision for saving that information was made. An example in Fiedler concerns recording of a telephone conversation which may be illegal until a participant's permission is obtained. Once the permission is obtained, because the recording began before the telephone conversation started, the person making the recording can legally record from the beginning of the telephone conversation. In Fiedler's system that beginning information is saved until a "discard" or "keep" decision is made for the telephone conversation. A similar situation may

occur in a attempting to record the beginning of some presentation when the beginning cannot be precisely predicted. According to the Fiedler concept, the recorder is basically turned on well in advance in the beginning of the presentation. Later, in sifting through the information recorded, the information recorded from before the beginning of the presentation can be discarded and the entire presentation from its precise beginning saved in accordance with the disclosure of Fiedler. Thus, Fiedler avoids the necessity of guessing when a presentation will begin and any need to synchronize a recording process with the beginning of the presentation. Clearly, the focus of Fiedler is entirely different from that of the claimed invention.

The first group of pending claims includes independent claim 5 from which claims 6-16 depend directly or indirectly. The method according to claim 5 provides for transferring at least one set of signals in an uncompressed format that has been previously stored in a first memory to a second memory. The transferred set of signals is then present in the uncompressed format. Then, the set or sets of signals in the second memory device are compressed in that second memory device to produce a set of signals in a compressed format. Finally, the set of signals in the compressed format is stored in either that second memory device or in a different memory device.

In the invention as defined by claim 5, sets of signals in an uncompressed format, initially recorded, are moved to a different memory device in order for compression of that set of signals before the set of signals in compressed format can be stored. As explained, this step is important in the invention because the microprocessor providing for recording sets of signals in uncompressed format is the same, relatively low computing capacity, microprocessor employed for moving the sets of signals and compressing the sets of signals.

In citing Fiedler, the Examiner directed attention to the passage at column 7, lines 42-47 as describing compression of recorded information. According to that passage, "Compression algorithms may be employed concurrently with recording the sound..., and/or on captured data in permanent storage....". Clearly, the invention as defined by claim 5 does not include compression of sets of signals, e.g., representing sound, at the same time as recording the sound. Further, while Fiedler may describe applying compression algorithms to captured data, there is no description in Fiedler as to how that compression process is carried out. Certainly Fiedler contains no description that individual sets of signals are moved from storage in one memory to a different memory in order to carry out the compression process as

in claim 5 and, for example, in claim 15, where one set of signals at a time is compressed. Thus, Fiedler cannot anticipate claim 5 nor any of its dependent claims 6-16.

Independent claim 17, like the method of claim 5, provides for transferring of one or more sets of digital signals in an uncompressed format from a first storage device to a second storage device. Those sets of digital signals are retrieved from the second storage device, subjected to compression, and then stored in the second storage device in the compressed format. According to the method of claim 17, the first and second storage devices are clearly different from each other. In the final step of claim 17, once the set of signals in the compressed format has been stored in that second storage device, to which it was transferred from the first storage device, the memory space in that second storage device is freed so that the memory space can be devoted to other uses, such as receiving new sets of signals in an uncompressed format from the first storage device.

Claims 17-21 are distinct from and clearly not anticipated by Fiedler for the same reasons that claim 5 is not anticipated by Fiedler. In addition, because in those claims 17-21 the sets of signals in compressed format are clearly stored in a different storage device than are the sets of signals in the uncompressed format, there is a further distinction from Fiedler. Fiedler never describes nor suggests the use of an additional storage device in applying a compression algorithm, clearly preventing anticipation and demonstrating a lack of obviousness of claim 17 and its dependent claims 18-21 in view of Fiedler. The rejection of those claims should be withdrawn.

Independent claim 22, from which claims 24-27 depend directly or indirectly, differs further from claim 17 in several ways. The signals are described more specifically in these claims as audio tracks and the prioritizing feature of the invention is an express part of the method of claim 22. As pointed out in the final paragraph of claim 22, according to that method, if a request is made for playing of an audio track, i.e., reproducing sets of signals, those audio tracks, if compressed, are decompressed and played. That retrieval and reproduction takes priority over compressing in which audio tracks in an uncompressed format are gradually converted to audio tracks in a compressed format. According to claim 22, compressing of audio tracks in uncompressed format and decompressing of audio tracks in compressed format are not permitted to occur simultaneously. Fiedler is entirely silent with regard to prioritizing various processes relating to data compression. In fact, because Fiedler employs a PC microprocessor, see Fiedler at column 4, lines 20-23, Fiedler has no

reason for this prioritizing. Therefore, Fiedler cannot possibly anticipate claim 22 nor its dependent claims 24-27.

Dependent claim 25 also expresses an important feature of the invention not described nor suggested by Fiedler. In the method according to claim 25, the transfer of a set of audio tracks to the second storage device to begin compression of that set of audio tracks can occur before the set of audio tracks is completely stored in the first storage device. See the present patent application at page 8, lines 5 and 6. This feature is not even suggested by Fiedler so that claim 25 is clearly patentable over Fiedler regardless of the patentability of claim 22.

Claim 28 is somewhat different in character from claims 5, 17, and 22, because claim 28 is directed to a system. That system includes a processor, for example, a microprocessor, that is programmed to produce the functions specified in claim 28. For example, the process causes a set of signals in an uncompressed format to be stored in a memory device. The processor also causes retrieval of a set of signals in the uncompressed format from the memory device and directs conversion of the set of signals so retrieved into a compressed format. In these steps, as in the feature of claim 25, the retrieval of the set of signals in the uncompressed format can occur when only a part of those signals have been stored in the memory device. Thus, in the described embodiment, for example, the compression process can begin, if no higher priority process requires attention of the processor, before all of a set of signals has been received in the uncompressed format. The processor in the system of claim 28 stores the set of signals, identified in the claim as digital signals, in the compressed format in a memory device and makes available the memory space previously occupied by the set of signals in uncompressed format for use in storing other information.

Claim 28 cannot be anticipated by Fiedler because of differences between Fiedler and claim 28 that are common to other claims already discussed. For example, in the system of claim 28, just as in claim 5, provision is made for retrieving signals in uncompressed format from one memory, transferring the set of signals to another memory, and, after compression, for storage in that other memory. Further, as in claim 25, in the system of claim 28 retrieval of a set of signals in uncompressed format can occur after only a part of the set of signals in uncompressed format has been stored in a memory device. Neither of these features is described nor suggested in Fiedler so that claim 28 and its dependent claims 29-34 are clearly distinct from and patentable over Fiedler.

Independent claim 61 is directed to a method of fast archiving audio signals under the control of a processor. In this method, a set of audio signals in an uncompressed format is transferred to a memory device. As in other described claims and embodiments, the processor controls accessing of the audio segment, i.e., reproduction of the audio signals that have been recorded. According to the method of claim 61, so long as the processor is not busy controlling access to an audio segment that is stored in a memory device, audio signals that have been transferred and that are in an uncompressed format are compressed and the resulting audio signals in compressed format are stored in the memory device. Again, claim 61 describes the priority of processing steps that is necessary in the invention because a processor with more limited processing capacity and of significantly lower cost, is used as opposed to the typical microprocessor found in a personal computer. By contrast, Fiedler contemplates the use of a personal computer in processing information. See column 4, lines 20-23. With the computing capacity of such a microprocessor, Fiedler has no necessity of the prioritizing arrangement of claim 61 and its dependent claims 62-54 so that Fiedler cannot anticipate any of those claims nor make them unpatentable as obvious.

Upon reconsideration, all of the claims now pending should be allowed.

Respectfully submitted,

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